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Message Text

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ACTION NSF-04

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FM AMEMBASSY RABAT
TO SECSTATE WASHDC 2434

UNCLAS RABAT 3088

DEPARTMENT PLEASE PASS NSF FOR DR RICHARD RAY, PROGRAM
DIRECTOR FOR GEOLOGY, EARTH SCIENCES SECTION

E.O. 11652: N/A
TAGS: TGEN MO
SUBJECT: INFORMATION ON SOUGH CAROLINA GEOLOGICAL SURVEY
TEAM PROGRAM

1. WILLIAM KANES HAS ASKED THAT FOLLOWING BE CABLED TO YOU
IN RESPONSE TO YOUR LETTER TO HIM OF JUNE 20:

2. QUOTE WHEN AND HOW DID THE ANCIENT SUPERCONTINENT
PANGEA BREAK UP TO FORM NORTH AMEICA, THE NORTH ATLANTIC
AND NORTH AFRICA? HOW GOOD IS THE BULLARD GEOMETRICAL FIT
FOR MATCHING THE CORRESPONDING MARGINS OF THE TWO CONTINENTS?
THESE ARE SOME OF THE QUESTIONS THAT ARE BEING ANSWERED IN
MOROCCO BY A MULTIDISCIPLINARY TEAM OF EARTH SCIENTISTS LED
BY WILLIAM KANES, ROBERT EHRLICH AND JOHN FERM OF THE
UNIVERSITY OF SOUTH CAROLINA. THIS PROJECT IS ONE OF THE
FIRST TO USE ON THE CONTINENTS THE BROAD SPECTRUM OF INTERACTING
SCIENTIFIC TALENT THAT HAS PROVED TO BE SO FRUITFUL IN
GEOLOGICAL OCEANOGRAPHY. STRATIGRAPHERS, PALYNOLOGISTS,
PALEONTOLOGISTS, PETROLOGISTS, GEOCHRONOLOGISTS AND OCEANOGRAPHERS
FROM 17 INSTITUTIONS ARE PARTICIPATING IN THIS EFFORT.

3. THE KINGDOM OF MOROCCO IS THE ONLY COUNTRY IN NORTHWEST
AFRICA WHERE THE GEOLOGICAL RECORD OF THIS CRUCIAL PERIOD IN
EARTH HISTORY IS EXPOSED. ELSEWHERE THESE ROCKS HAVE EITHER
BEEN LOST TO EROSION OR BURIED BENEATH YOUNGER SEDIMENTARY
DEPOSITS. IN CONTRAST TO NORTH AMERICA, MOROCCO HAS A NARROW
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CONTINENTAL SHELF ALLOWING EXAMINATION OF CRITICAL ROCK

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SEQUENCES ALMOST TO THE CONTINENTAL MARGIN.

4. THE INVESTIGATORS HAVE LOCATED THE ROOTS OF OLD MOUNTAIN RANGES IN WESTERN MOROCCO WHICH WERE VIOLENTLY UPLIFTED 300 MILLION YEARS AGO. THIS PROCESS INVOLVED COMPLEX INTERACTIONS BETWEEN VOLCANISM, CRUSTAL DISRUPTION, AND SEDIMENTATION. THESE EAST-WEST TRENDING RANGES CAN BE TRACED WESTWARDS TO THE ATLANTIC SHORE. DETERMINATION OF THE NATURE OF THE PROCESSES THAT UPLIFTED THESE MOUNTAINS AND OTHER TECTONIC FEATURES OF SIMILAR AGE AND ORIENTATION OF THE CHAIN PROVIDES INFORMATION CONCERNING CRUSTAL DYNAMICS IMMEDIATELY PRECEDING DRIFT AND CRITICAL DATA FOR TESTING THE "FIT" BETWEEN THE CONTINENTS.

5. ANOTHER GROUP WORKING IN THE HIGH ATLAS HAS DETERMINED THAT THIS AREA WAS AN ABORTIVE "PROTO ATLANTIC." THAT THIS, WHEN DRIFTING BEGAN, A DEEP BUT NARROW SEAWAY OPENED IN THIS REGION. THIS SEAWAY, LESS THAN 50 MILES WIDE HAD COLONIES OF SHALLOW WATER REEFS GROWING ON ITS MARGINS AND SEDIMENTS CHARACTERISTIC OF VERY DEEP WATER (MORE THAN 5, 000 FEET) ALONG ITS CENTRAL AXIS. THIS SEAWAY BEGAN TO FORM AT THE SAME TIME AS A SIMILAR SEAWAY TO THE WEST. THE MORE WESTERN SEAWAY BECAME THE ATLANTIC OCEAN. THUS THE ATLAS SEAWAY IS REPRESE-NTATIVE OF THE ATLANTIC OCEAN IN ITS EARLY STAGES OF DEVELOPMENT. THESE RESULTS, AND OTHERS TOO NUMEROUS TO RECOUNT HERE ARE PROVIDING INFORMATION ON THE RESPONSE OF CONTINENTAL BLOCKS TO PLATE TECTONICS. IN ADDITION TO PROVIDING FUNDAMENTAL KNOWLEDGE ON GLOBAL DYNAMICS, THESE RESULTS WILL PROVIDE AN IMPORTANT FRAMEWORK FOR RATIONAL DEVELOPMENT OF THE RESOURCES OF CONTINENTAL MARGINS.

6. IN ADDITION, THE PROJECT HAS MADE AVAILABLE TO THE AMERICAN ACADEMIC AND INDUSTRIAL COMMUNITY VAST AMOUNTS OF DATA IN THE FORM OF RAPID PUBLICATIONS THAT HAVE HERETOFORE NOT BEEN AVAILABLE TO THE ENGLISH-SPEAKING WORLD. END QUOTENEUMANN

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